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An Account of the Collections which illustrate the Labors of Dr. Asa Fitch.

Having been requested by the family of the late Dr. Asa Fitch, State Entomologist of New York, to examine and report upon the condition of his great collection of insects, I visited "Fitch's Point," Salem, N. Y., on the 12th and 13th of November last and made as careful an investigation thereof as the time and circumstances allowed. Believing the accompanying facts of general interest to all naturalists I respectfully submit the following notes.

Dr. Asa Fitch's "general collection" of insects of all orders fills one hundred and six boxes ("cartons liégés" of Deyrolle, nearly all of double depth, size $26 \times 19\frac{1}{2}$ cm.), and is now in excellent condition, having only to the extent of perhaps fifteen per cent. suffered from a slight coating of dry mould, easily removed. No Anthrenus or other Dermestidae are to be detected among them. Very few, perhaps fifty in all, are broken or badly damaged, out of upwards of fifty-five thousand numbers. The collection, although largely from the United States, is by no means confined thereto, as it contains numerous specimens from all parts of the world, obtained by exchange with Drs. Sichel and Signoret and Messrs. Fairmaire, Andrew Murray and others. The coleoptera occupy eighteen boxes, orthoptera seven, neuroptera six, hymenoptera eight, diurnal lepidoptera four, and the heterocera seventeen. Both divisions of the hemiptera are nobly represented, the heteroptera filling fourteen, while the homoptera, to which group the doctor, as all are aware, devoted so much study, occupy twelve boxes, including all the types of the descriptions in the New York State Agricultural Reports. Diptera are contained in five boxes, while the remaining four include arachnida, myriapoda, crustacea, etc., mostly terrestrial and local.

In addition there are two large cases containing duplicates, by estimate over one hundred thousand pinned coleoptera, principally from New York state, and upwards of twenty thousand of other orders, as well as several trunks, boxes, etc., containing exchanges which seem never to have been incor-

porated with the general collection, to the number of perhaps two thousand. Some of these cases, especially among the New York duplicates, have been visited by *Dermestes lardarius* and badly injured, not exceeding twenty per cent. however. Several double boxes exhibit biological illustrations in the shape of galls, etc., generally well identified and labelled, but exposed to derangement unless very carefully managed in the process of transportation. A great number of specimens of *Cecidomyia* and allied genera had been carded and studied by Dr. Fitch with an astonishing amount of patient labor, but the too open boxes which contained them have been invaded by the little destroyer *Ptinus fur*, as we caught him *flagrante delictu*.

A few hundred interesting and chiefly minute specimens from Hong Kong, collected by the late Rev. M. S. Culbertson, are in fair preservation, but not incorporated with the general collection, as is the case also with a lot of larger forms from Brazil, obtained by Sr. A. de Lacerda.

One hundred and forty-eight note books, of about 10x15 cm. (from memory), and varying thickness, contain an exhaustive descriptive catalogue of the collection, each specimen with its date of capture, locality, etc., being numbered, beginning about the year 1833, and a brief diagnosis, followed by a fuller description and remarks, accompanying the majority of the New York species. The numbers of specimens referred to in the note-books reach as before stated fifty-five thousand (*circa*), although doubtless many specimens have either been exchanged or destroyed.

Dr. Fitch's family value the collection as it stands at the minimum rate established by the doctor himself, namely five thousand dollars, certainly no exorbitant price for the fruits of upwards of forty-five years' labor, and it is hoped that as none of his family inherit his love for the science it will soon pass into the hands of some institution of learning where experienced and careful manipulators will cherish and preserve this monument of patient industry, unrivalled on this continent at least.

A large and valuable library of works on entomology in various languages, containing many rare and curious volumes,

and a valuable microscope by Nachét were likewise stored in the small wooden building or "office" a few metres back of the dwelling house, the latter within a few months of its centennial anniversary.

The faithful shepherd dog that for some years past accompanied the good doctor in his walks, sleeps nightly on the floor of the little office porch, guarding these treasures of science in their frail receptacle.

Francis G. Sanborn.

The biological collection of insects belonging to the New York State Agricultural Society was arranged by Dr Fitch, about ten years ago, when he was still holding his position of Entomologist to the Society. It is arranged in six cases, attached to the railing of the second floor of the society's museum. In these cases are contained examples of the injurious insects of the state of New York, in their several stages, and in some instances accompanied by specimens of their depredations, displayed in the following order :

Case 1. Insects infesting grain and other crops ; Case 2. Grass insects ; Case 3. Insects of the garden ; Case 4. Insects infesting fruit-trees ; Case 5. Insects infesting fruit-trees ; Case 6. Insects injurious to man and animals.

The number of specimens is about sixteen hundred. With the exception of perhaps one hundred specimens subsequently added, the present arrangement and labeling is that of Dr. Fitch ; in the latter, a few changes would be required to make it conform to present nomenclature.

In a series of wall-cases occupying the western gallery of the third floor of the museum are contained the larger biological specimens illustrative of insect depredations on plants, timber, furniture, etc., and exhibiting the larval stage, in alcohol, of some of the larger forms.

The State Agricultural Society, recognizing the value of this collection, and the importance of its preservation from insect attack, upon the retirement of Dr. Fitch placed it under my care.

In the year 1874, four large hanging-cases of insects were purchased of Dr. Fitch, for the State Museum of Natural

History, catalogues of which were published in the Second and Fourth Annual Reports on the State Cabinet. Of these, the three cases of coleoptera and lepidoptera were speedily destroyed by the ravages of the museum pest, *Anthrenus varius*. The more valuable case of homoptera, containing a number of Fitch's types,¹ was rescued from entire destruction. Only about a fifth of the specimens, principally of the aphides and other small forms, was lost. The remainder have been rearranged and are carefully preserved. *J. A. Lintner.*

Junonia Coenia in New England.

It is not surprising that this southern butterfly should be classed among the *rari papilionēs* which occasionally extend their range to New England; for in its own home it is a very common insect, and the food plants of the caterpillar, *Linaria* and *Gerardia*, are found abundantly north of any locality at which the butterfly has been taken. Until recently, however, all the New England specimens I had seen were so rubbed as to render it probable that they had flown from a Southern station,—a hypothesis which the long winter life of the imago in the south rendered defensible. Now Mr. Charles A. Davis sends me an exquisite photograph of two specimens which he took at Portsmouth, N. H., in July 1876, in a condition so fresh that they must have been bred on the spot. On looking up the record of the specimens heretofore taken in New England and seen by me, I find they were all captured in August or September, and would naturally have been rubbed, if disclosed in July. It can therefore scarcely be doubted that the species breeds in New England. Whether, as appears to be the case in the south, the insect is double brooded and winters as a butterfly, remains to be determined; it is the purpose of this note to direct attention to this enquiry, and to ask any one obtaining eggs or caterpillars to send me specimens for illustration. As a working hypothesis, I venture to suggest that the insect is single brooded in New England, appearing as a but-

¹ See Fitch, Ann. Rep. State Cab. Nat. Hist., 1851, 43-70, for descriptions of types.